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ARCHAEOLOGICAL MATERIAL FROM THE VILLAGE SITE AT HOT SPRINGS, PORT MÖLLER, ALASKA

By Edward Moffat Weyer, Jr.

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Introduction

The archaeological material to be described was secured from one site at Port Möller, Alaska, by the archaeological party of the Stoll–McCracken Arctic Expedition of the American Museum of Natural History. Exactly one month was spent on the site (May 23 to June 23, 1928), while the expedition's schooner *Morrissey* was anchored at the mouth of Möller Bay. During most of the time the writer was assisted by one or two others of the expedition, and for two weeks a settler of Herendeen Bay, Edward Larsen, was employed as cook and general assistant.

Preliminary to the actual excavating the site was surveyed and mapped and the ground studied with a view to selecting the most promising spots. In this reconnaissance and during the digging a so-called sounding rod was employed to great advantage. This implement was made from a yard length of spring steel ¼ inch in diameter, sharpened at one end, and fitted with a knob at the other as a handle. With practice, by thrusting this probe into the ground one can determine what he may expect to encounter by digging: shell refuse, bones, stone, frozen ground, or simply sand or earth.

During the thirty days at our disposal the small party worked intensively, securing a total of about eleven hundred objects showing human workmanship. Of the bone and ivory objects roughly three hundred and twenty specimens had sufficient character to be of interpretative value. There were some five hundred fragments of shale chipped to form spear points and other edged objects, as well as about fifty stone articles such as sinkers, lamps, etc. All of the specimens were returned to the American Museum of Natural History. Only a very small fraction of the area of the site was excavated.

The digging season on the Alaska Peninsula is not narrowly restricted by the freezing of the ground as it is in Northern Alaska. In June we encountered only one patch of frozen ground: in Trench Q a layer about a foot in thickness near the surface.

High winds which blew almost continuously made excavating unpleasant. Each time a shovelful of fine débris was thrown into the teeth of the gale a gust of shell flakes was sent back in the face of the digger. The only satisfactory plan was to work several trenches having different exposures, in turn, according as the wind shifted. The weather was raw and windy most of the time. There was considerable rain, some hail, and a slight fall of snow.

At least at this season a small launch is likely to have difficulty in navigating the water between the village site and the outer sea. Due to tide rips at the mouth of the bay and to shoal areas at low water one may expect to be kept in forced isolation for days. There is a cannery on the outer coast just east of the mouth of the bay.

Photographing was rather difficult because of the infrequency of good sunlight and the winds which were at times high enough to carry away a tripod camera were it not held down. Plates were kept in sealed tins to avoid possible injury from the sulphurous fumes from the hot spring.

During historical times the boundary between the Aleut and Eskimo peoples has stood near Port Möller. Petroff, in his census report of 1880 (p. 226), classes the inhabitants of Port Möller among the Aleut, placing the demarcation at the Ugashik River, a short distance to the east, beyond which the country was inhabited by Eskimo of the Aglemiut tribe. Previous to the beginning of the nineteenth century, however, according to Petroff, there was a settlement of Aleut at the mouth of the Naknek River, at the base of the Alaska Peninsula. West of Port Möller along the Aleutian chain the Aleut have been the native people.

Port Möller is an irregular indentation on the north coast of the Alaska Peninsula extending inland about twenty (?) miles and backed by rugged mountains. Sandspits constrict the mouth of the bay. Within, the shore line is broken into numerous coves and headlands, formed when the uneven land was partially immersed within fairly recent geological times. The projecting spurs have been cliffed by wave action, and the products of this erosion have shallowed the bay, giving the coast the features of early maturity in the physiographic cycle. Extensive mud flats are exposed at low tide, particularly in the minor coves.

These tidal flats have an important bearing on food supply, for the areas exposed at low tide offer a bountiful source of shellfish. The ancient village is located on a cliffed headland surrounded by such tidal flats. That the ancient inhabitants utilized the mollusks extensively for food is evinced by the abundance of shells among the refuse. Another circumstance favorable for human settlement is the protection afforded in Möller Bay from the rougher water of the outer coast. The village site has the added local advantage of a hot sulphurous spring (158° F.) providing drinkable water.

Corrugated cockle shells were by far the most abundant type, especially in the upper layers of refuse. This form of life is today probably the most plentiful among the shellfish in this spot. They can

be gathered from all parts of the flats exposed by the tide and lie just below the surface. Second in abundance in the refuse were the shells of the large-footed clam of the variety commonly used by us in making clam chowder. These shells are about four inches long. Somewhat

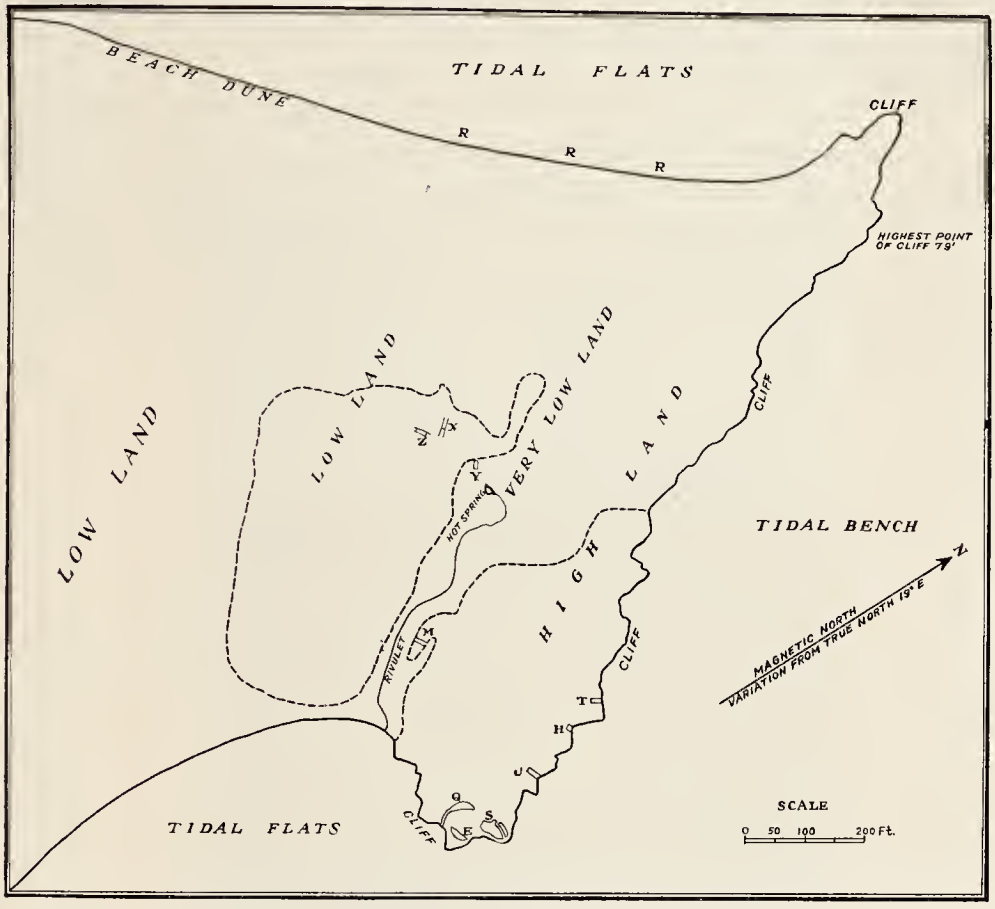


Fig. 1. The Village Site at Hot Springs, Port Möller, showing the Location of the Trenches.

less abundant were the shells of the Eastern soft-shell and the blue mussel. Snail shells were found in patches during the excavating, but were less common than the others mentioned.

The bays from which these shellfish were gathered are filled with ice between approximately early December and early March. Thus this source of food is restricted seasonally. Further, Petroff (p. 232) and Holmberg (pp. 94–95) mention a common belief in this region that mussels are poisonous at certain times of the year and in certain spots.

Mammals, both of the land and the sea, were the other important

sources of food. Bones of caribou, seal, and whale were plentiful. Walrus remains, also, were found, though perhaps more rarely. The caribou was the most important of the land animals and was doubtless hunted at all seasons.

Bird bones were found in considerable quantities. At present, birds are most abundant in early spring and late fall, though most of the varieties can be caught even in mid-winter.

Fish bones scattered through the refuse heaps indicate that the ancient inhabitants were fishers as well as hunters. Local conditions about the village site are not particularly favorable to fishing on a large scale, there being no large rivers in which spawning salmon could be caught in July and August. However, the abundance of fish in the general region justifies a cannery at the present day at the mouth of Port Möller.

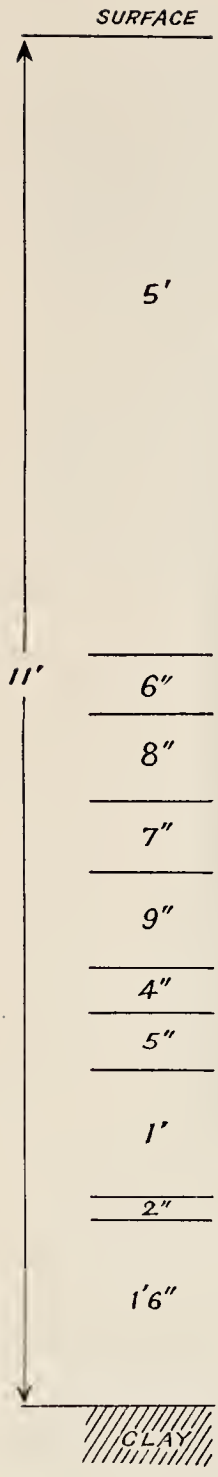
Refuse Strata in the Chief Trenches

The various trenches may be located on the map in Fig. 1. The most productive excavations were those near the edge of the cliff. Of these, Trench U probably showed the most definite stratigraphic assortment of the refuse. Here the bottom of the refuse was about 11 feet below the surface. The topmost five feet was dry peat and wind-transported material, almost free of shells. Beneath this the refuse lay

Fig. 2. Trench U showing Stratification of Refuse and other Material.

in fairly regular horizontal beds (Fig. 2). Fig. 3 describes the stratigraphic sequence.

A notable feature of this trench was the way in which the horizontal refuse layers are beveled across at the edge of the cliff, as is diagrammatically illustrated in Fig. 4. Strangely, as would be expected, the strata did not curve down toward the edge of the heap, but continued horizontally to the very end. Here above the brink of the cliff the strata were beveled sharply and mantled by a layer of dark soil.



Black earth (dry peat and wind-transported material) with a scattering of cockle shells and mussels, and some pebbles

Powdered shells, pebbles, and miscellaneous small bones

Black earth with very few shell fragments

Powdered mussels and fish bones, with pebbles intermixed

Black earth, with scattered patches of charcoal

Snail shells

Mussels and fish bones (highly compressed)

Hard clay

Fine shell powder; a few large bones (walrus?), bones of birds and fishes; evidence of fire

Yellow clay, with the bed rock outcropping in places

Fig. 3. Stratigraphic Succession in Trench U.

The only interpretation of this phenomenon seems to be that the cliff has receded during the long time that has elapsed since the refuse was thrown down. This would permit the falling away of the dipping strata of refuse that naturally must have been formed at the edge of the pile, leaving only horizontal beds. The depths of articles removed from this trench are in every case reckoned vertically from the uppermost surface level.

Trench Q is a second good representative trench, which was cut along the crest of the refuse near the edge of the southward facing cliff.

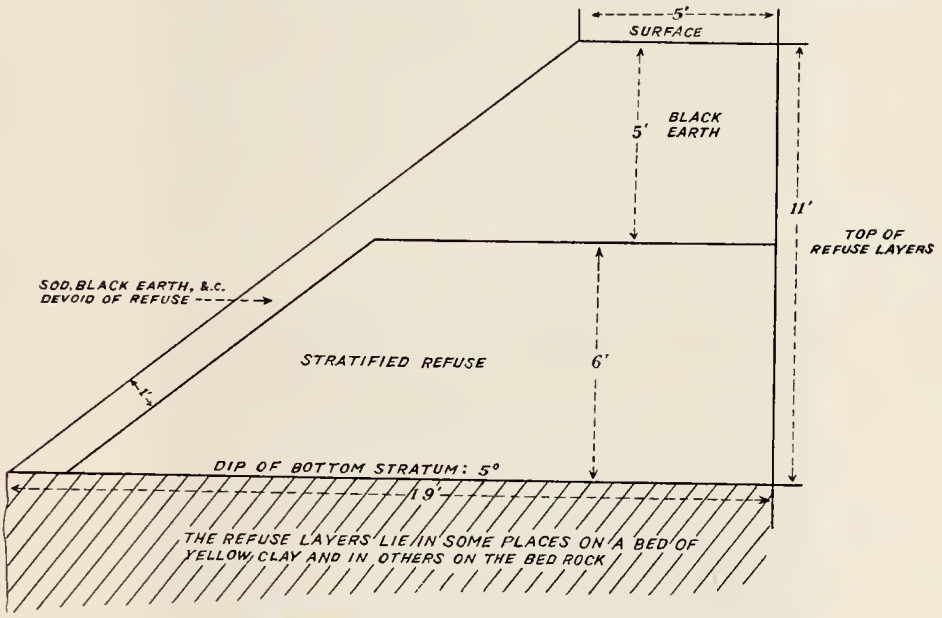


Fig. 4. Side Section of Trench U.

Fig. 5 is a complete section of the refuse exposed by this excavation; while Fig. 6 indicates the sequence of the strata diagramatically. As is clearly seen from Fig. 5, these beds do not extend throughout as perfect strata, but the sequence indicated may be taken as representative.

A narrow trench, Trench Q+, leads from Trench Q to the edge of the cliff. Depths recorded from Trench Q+ sometimes indicate greater age than corresponding depths from Trench Q. This is due to the sloping face above the cliff which causes old strata to lie very near the surface. Unfortunately, the bedding was too vague in this extension of Trench Q accurately to determine levels.

Fig. 7 is a panorama of Excavation S. The face of the refuse exposed in the panorama lies some thirty feet back from the edge of the cliff and

Fig. 5. Stratigraphic Sequence in Trench Q.

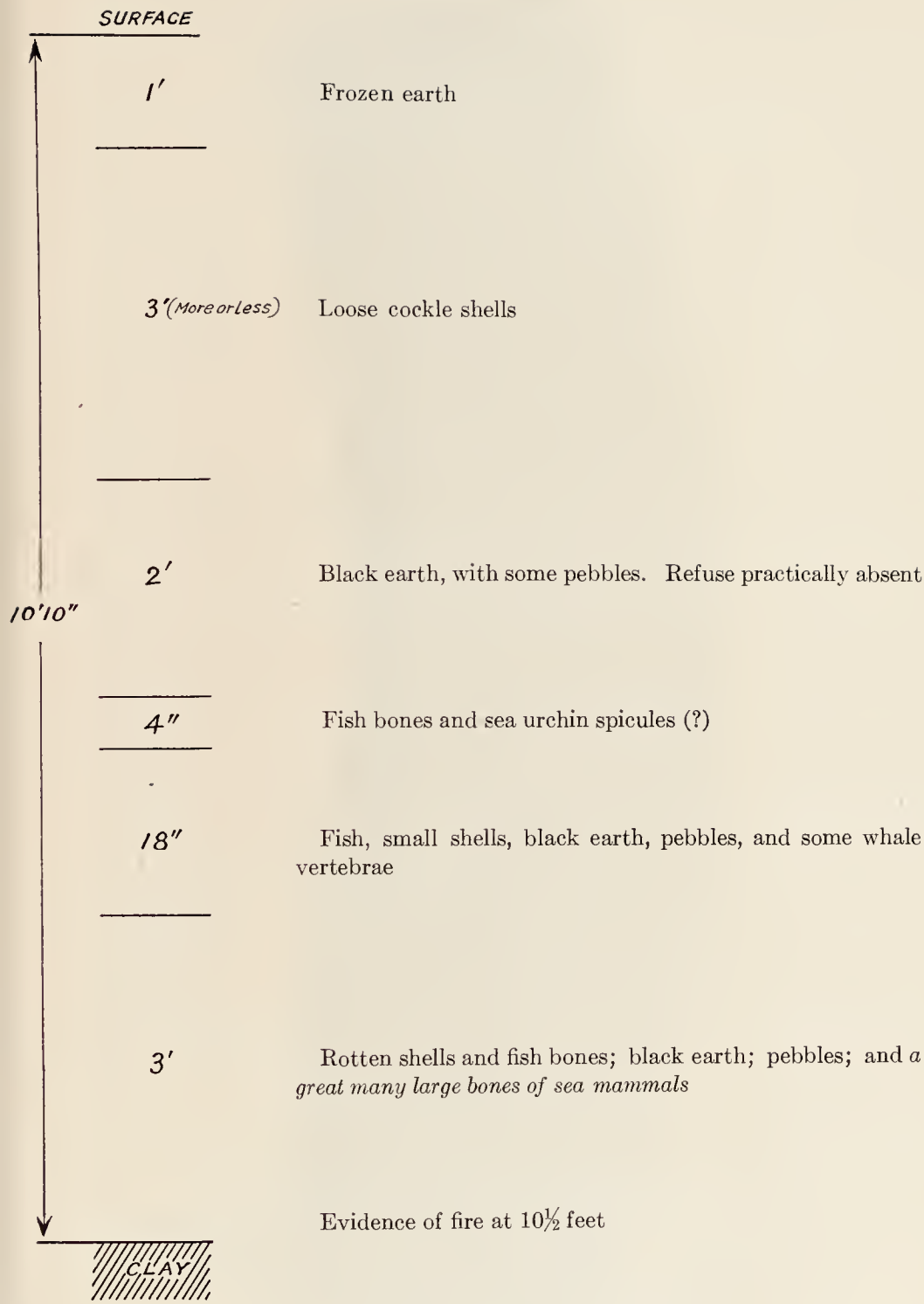

SURFACE
1′
Frozen earth
3′(More or less)
Loose cockle shells
2′
Black earth, with some pebbles. Refuse practically absent
10′10″
4″
Fish bones and sea urchin spicules (?)
18″
Fish, small shells, black earth, pebbles, and some whale vertebrae
3′
Rotten shells and fish bones; black earth; pebbles; and a great many large bones of sea mammals
Evidence of fire at 10½ feet
CLAY

Fig. 6. Stratigraphic Sequence in Trench Q.

Fig. 7. Section exposed by Excavation S.

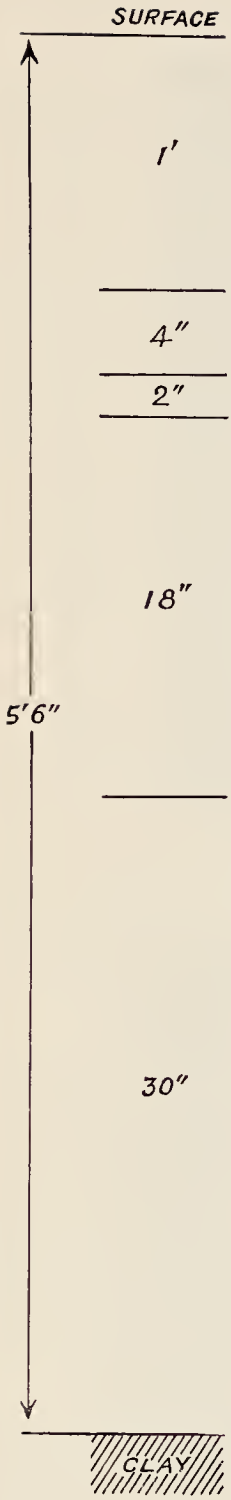


Fig. 8. Representative Section of Cut S.

all the intervening material was removed. The photograph was taken from the top of a pile of discarded refuse. In the center the section was 6½ feet thick. Here the deepest horizon corresponds, so far as we can know, roughly with the bottom layers of the other trenches just described, though the latter lay almost twice as deep (11 feet). Excavation S was fruitful in artifacts. However, as a basis for determining the relative age of specimens it is scarcely as valuable as Trenches U and Q, just described. The material tapers toward the edges of Excavation S, as Fig. 7 shows, and it likewise tapers toward the cliff. Hence, articles from these peripheral sections are much older than their depth would indicate, for there even the lowest layer lies near the surface. However, the depth was the only data that could feasibly be noted. Thus it is clear that, in attempting a correlation among the various excavations, all that can be assumed regarding specimens from Excavation S is that they are *at least* as old as anything from approximately twice their depth in Trenches U and Q.

Excavation E was very near to S and for all purposes might be grouped with it. Stratification here was irregular, but there was everywhere a mantle of earth practically void of refuse, 2½ feet to 4 feet thick, overlying the first deposit of shells and bones.

Pit T was dug at the edge of the cliff; consequently it can be grouped with the trenches that have already been discussed. The section that was exposed by it was characterized by a two-foot layer of loose cockle shells just under the surface soil. The deepest refuse was 5 feet below the surface, beneath which lay clay.

Trench M was cut through a ridge of highly consolidated shells, almost as hard as concrete. Fig. 9 illustrates this trench, and Fig. 10 shows two fragments of the cemented refuse removed from it. The type of material composing this mound is different from any other refuse we found. Especially towards the bottom of the trench the substance was so solidly cemented as to render excavating almost impossible. At a depth of 10 feet, at the level of the surrounding ground, an intermixture of earth with the shells indicated the foundation of the mound. This level was only several feet above high tide. The mound is over 100 feet inland from the beach and it lies at right angles to the shore line.

Judging solely from the character of the material, one might infer that the mound was formed naturally. However, ashes found at a depth of 8 feet in the trench prove conclusively that the mound was deposited by people, and that it is not a natural formation. Corroborative evidence is given by the apparently charred or scorched surface of some of

Fig. 9. Trench M.

Fig. 10. Two Fragments of Highly Consolidated Shell Refuse from Trench M.

the shells, and by a piece of petrified wood (Trench M 7½ feet) showing evidence of having been in a fire. Whether this piece became petrified while it was in the refuse mound or before, cannot be said.

Trench X was cut to a depth of about 9 feet, chiefly through loose cockle shells. Fig. 11 shows the section diagrammatically. There were animal bones scattered throughout but towards the bottom they became scarcer, especially the smaller ones. Fairly near the bottom was a part of a walrus skull and at the bottom a large piece of bone from a whale. The shells in the lowest parts were entirely cockle. This refuse heap is probably of relatively recent origin. The position of every article taken from it was carefully noted, but these data are considered too complicated and inclusive to be included here. Artifacts of bone were scarce. The most plentiful artifacts from this trench were chipped pebbles. These may have been used as sinkers, or as personal ornaments. They were practically absent from all other excavations on the site.

Trench Z was dug in a depression between hummocks of refuse. Black earth grading into lighter sandy clay extended to a depth of 50 inches. Throughout this section shells were scanty, except for scattered patches. There were a few large pieces of bone of whale, decayed almost to powder. Charcoal was found at a depth of 50 inches. Below a depth of 56 inches there was a definite substratum of sand devoid of any traces left by man.

Pit Y yielded no archaeological material. It showed the following bedding, rather brightly colored by reason of the proximity of the spring:—

18 inch blackish earth
4 inch yellowish-brown sand
8 inch blue-gray sand, grading into blue sand.

The depth at which every article was found was carefully noted, but data are lacking in the case of some of the objects, chiefly those which were overlooked and dumped over the cliff with the refuse, later to be exposed when the high tide washed the material clean on the beach below. Knowledge as to depth was unavailable also when a section of Trench Q+ caved in.

Aside from the excavations, which are all described above, many specimens, especially chipped stone points, were picked up along the beach south of the village site. Finally, the seaward face of the dune on the north beach yielded some objects. This source is referred to as *R.*

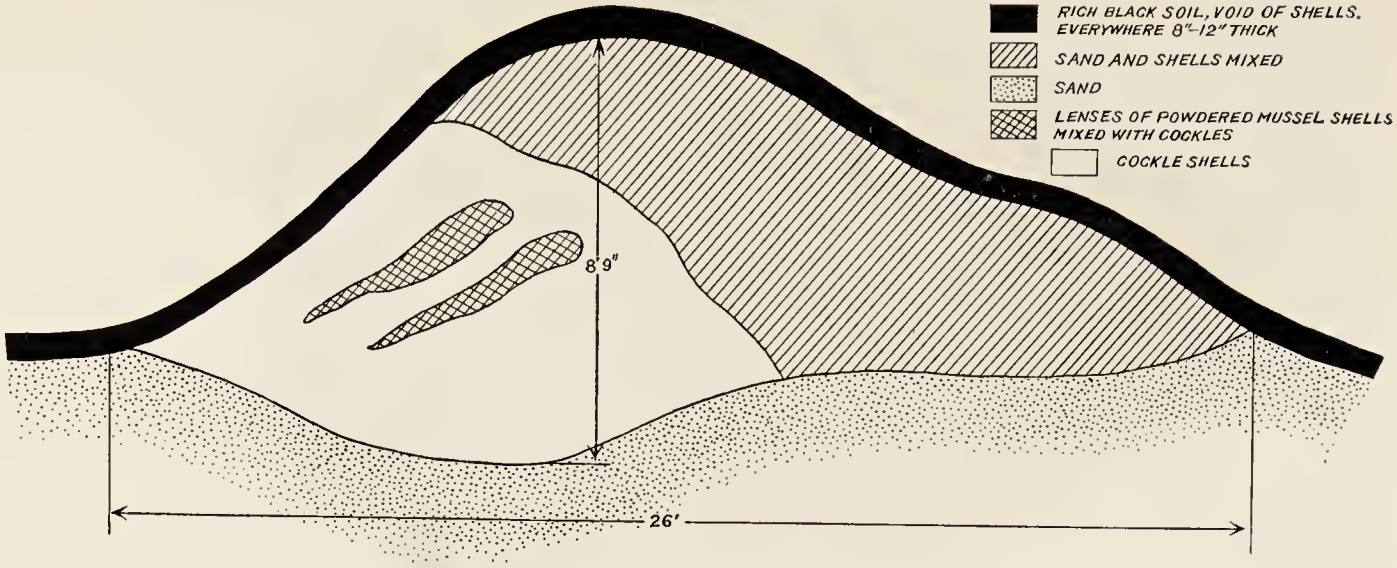


Fig. 11. Longitudinal Section of Trench X.

Fig. 12 (60.1–5834). Ceremonial Mask carved from Whale Bone. From Excavation S.

Fig. 13 (60.1–5833). Ceremonial Mask carved from Whale Bone. From Trench U.

Judging from the conditions prevailing here, articles from this source must be relatively recent, even though covered by several inches of wind-blown material, as they occasionally were.

Description of Specimens

Throughout the following discussion of the stratigraphic distribution of the specimens found, it should be remembered that all deductions must be tentative by reason of the relatively small number of examples of any one type. However, some conclusions which are suggested by the material, such as it is, will be put forward with the expectation that they will be tested by further research.

Bone Masks. Perhaps the most interesting objects found are two ceremonial masks. These are carved probably from the jaw bone of the whale, which, as Jochelson mentions, is particularly hard and durable. Both masks are in an excellent state of preservation. Both were found at a depth of about 5 feet. However, the smaller one, from Excavation S, is probably the older.

The material overlying the latter mask was almost entirely fine, dark earth, practically devoid of refuse. Fig. 12 illustrates the carving of the features: the holes for eyes and mouth, and the teeth inlaid in the upper and lower jaws. This mask is 6¼ inches by 4⅛ inches. It was probably attached to two sticks passing through the large notch in the chin and entering two holes beside the eyes.

The second mask (Fig. 13) was found in Trench U about a foot below the five foot surface covering of dark earth which was practically devoid of refuse. The mask lay in a bed of finely disintegrated shells. Its dimensions are 6⅝ inches by 5⅛ inches. Around the edge are five holes for its attachment. It might have been worn, though it is small for this use.

Neither of the masks was found in close association with human remains, although the one from Excavation S lay a foot or so below some human leg bones and about two feet below a human jaw bone. They were probably not intended for grave masks. Unlike masks from the Aleutian Islands, Kadiak Island and Chugach or Prince William Sound they do not have the cross piece on the inside by which the masks were held between the teeth.[1]

Burials. No burial ground was found in association with the village site at Hot Spring, in spite of the fact that a careful search was

[1]Dall, 1878, 4–5, 28–30, 32.

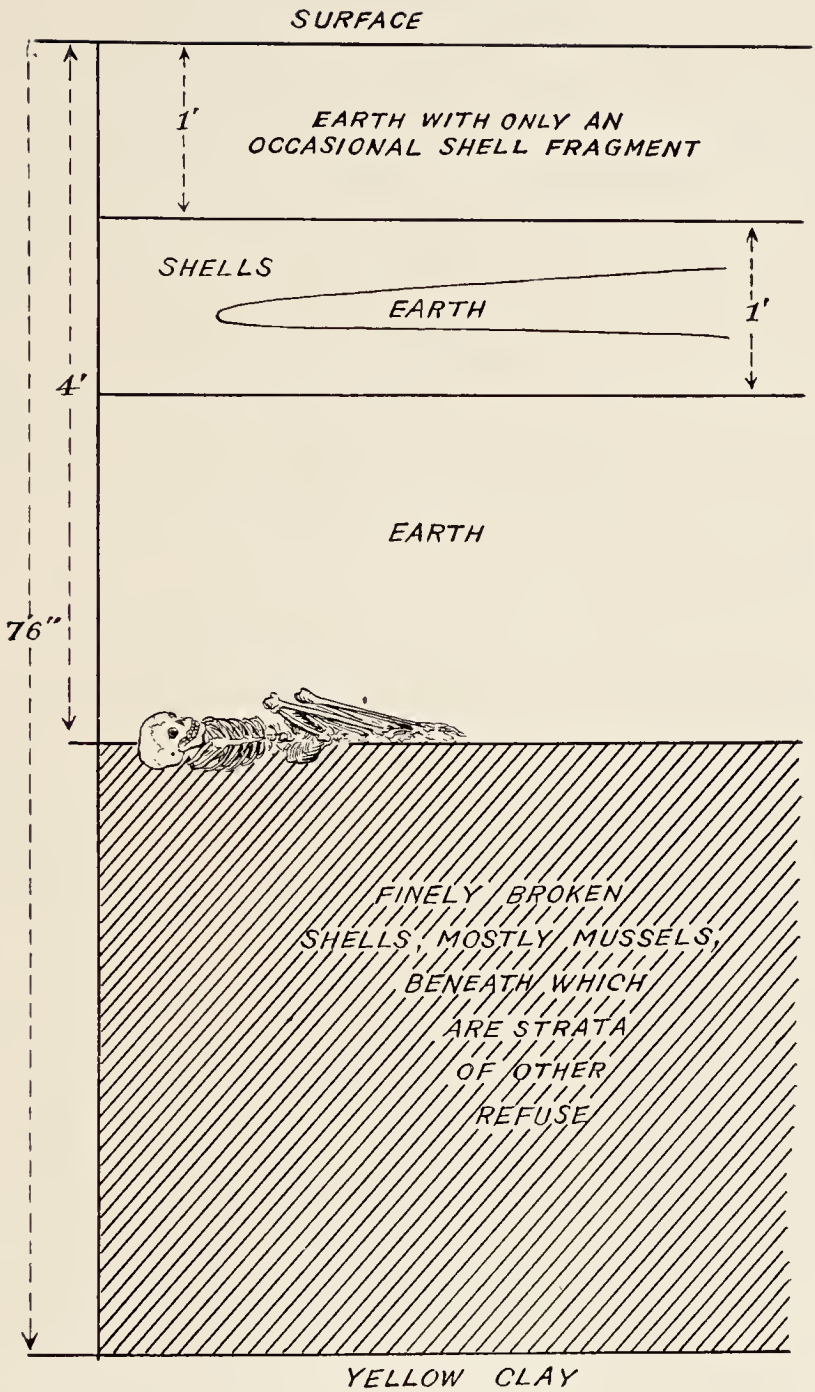


Fig. 14. Excavation S, showing Position of Skeleton 99–9480.

made in the environs. Human remains were discovered occasionally, however, in the course of the digging. The most important of these finds was a grave unearthed in Excavation S. It was located in the small niche shown in the panorama of Excavation S (Fig. 7), just to the left of the center of the picture. Fig. 14 shows diagrammatically the position of the body in relation to the surrounding refuse. Bones bearing catalogue number 99–9480 belong to this burial. The skeleton lay in a rude frame of several rocks, with two stones over the feet, one over the head, and two skulls of large sea mammals over the trunk. The bones were badly deranged, a condition suggesting that the body may have been placed there some time after death. The body seemed to lie in an extended position, rather than in the doubled up position, for the pelvic ends of the femurs lay toward the head, about a foot from the chin. The skull lay toward the north, facing upward.

There were miscellaneous bones of animals about the skeleton; but no other grave deposits.

Fig. 14 shows the position of the skeleton with relation to the material above and below it. There is no way of telling how much of the material above the body was placed there at the time of burial. It would seem that at least the upper half of it was from slow accumulation.

The most striking feature of this burial was the bed of rich red powder in which the body lay. This material (iron-colored clay [Dr. Whitlock]) had been packed in and around the body in such quantities as to hide the skeleton completely. One eye socket was filled with the powder and all the bones were stained red.

The use of this red powder in burials seems to have been common at the Hot Spring village site. In Pit T a decayed skeleton was covered by similar powder, though in this case the powder was a very dull red, containing considerable magnetite and an intermixture of hematite particles, which gave it a sparkling appearance. Another skeleton was found in Pit T buried under 2 feet of earth and later covered by a 15 inch layer of cockle shells and a foot of surface soil. Seven inches below this skeleton was a layer of red powder three quarters of an inch thick. The body was extended, with the head lying towards the east-northeast. There was a large stone over the knees. The bones were almost completely decayed.

Red powder was found also in association with a single human skull found under four feet of material, mostly dark earth, in Excavation S. It lay in a bed of fine shell fragments, fish bones, and charcoal. When

unearthed, it was filled with pebbles and earth. The skull and refuse adjacent were stained red by the usual powder. This skull must be relatively quite old, for it lay near the substratum of clay. The skull was in a very delicate condition, but we preserved the fragments (A211).

Dwelling Type. Unfortunately but little can be said on this rather important question. This is due to the fact that very little excavating was done in the section west of the hot spring and its rivulet, where doubtless most of the dwellings had been. From the results of our digging there it was judged to be a less profitable field, considering the short time at our disposal, than the refuse deposits on the higher ground east of the rivulet which yielded more abundant artifacts.

Trench Z, dug in a likely spot for a dwelling,[1] disclosed an occasional horizontal piece of powdery whale bone suggestive of a roof rafter. In none of the excavating was there found a trace of a stone wall or even a fragment of wood. We should expect further digging to reveal evidence of the half-underground hut typical among more recent people to the east and west of Port Möller.

Lamps. All the lamps and fragments of lamps, comprising about seven examples, were of stone. In no case was relatively great age definitely indicated by depth below the surface. This can hardly be significant, however, in the light of some specimens secured by Jochelson which point toward considerable antiquity. For example, he found one elliptical stone lamp at a depth of 3.4 meters, near the bottom of a site which seems to be very old (Atka Island). Jochelson says, however, that "Polished stone lamps and adzes were also found mainly in the upper layers." Jenness[2] is of the opinion that stone lamps were used at Cape Prince of Wales (Bering Strait) only after about 1800, inasmuch as all the older lamps from there are of clay.

Pottery. A single specimen of baked clay was found during the excavating. It was a nondescript fragment, no larger than a thimble, of red, sandy clay, which may have been baked. Jochelson (p. 28) found but one specimen of pottery, a half of an unbaked clay lamp, at a depth of 2.4 meters in an old site of Atka Island. Dall also found one specimen of pottery on Atka Island (p. 80). Thus, the Aleutian Islands lie at the edge of the area of Eskimo pottery, perhaps in somewhat the same peripheral relation to it as the ancient site of Naujan on the Melville Peninsula, where Mathiassen found three sherds. Siberian tribes nearest to

[1]For further information concerning the typical dwellings in this part of Alaska, see: Sarytschew, vol. 2, 72; Jochelson, 21, 120, etc., Coxe, 181–182, 225 (Unalaska and the Aleutian Islands); Petroff, 232, Sauer, 175, Holmberg, 96–97 (Kadiak Island); Petroff, 224 (Togiak River, Bristol Bay).

[2]Jenness, 1929.

Fig. 15 (60.1–5818, 5817). Labrets.

Fig. 16*a* –*b* (60.1–5816, 5813). Nose Ornaments.

the Aleutian Islands, the Koryak and the Kamchadal, have known the art of making pottery.

Labrets. The labret, or lip plug, was formerly common among all the western Eskimo, including the Kadiak Islanders (Konjag), and among most of the Aleut. Its distribution seems never to have spread east of the Mackenzie region or into Siberia west of the westernmost Eskimo around East Cape. The labret is not known to have been used at Attu, the westernmost island of the Aleutian chain.

A wide variety of types has been evolved.[1] Two specimens were found at Port Möller (Fig. 15). The slender type was commonly worn in pairs below the corners of the mouth. The larger specimen came from a depth of 4 feet in Excavation S, and the smaller one probably from 6 feet in Trench Q.

Nose Ornaments. Fig. 16 illustrates typical Aleutian nose ornaments from the Port Möller site. The age of the few specimens in this collection is uncertain. These ornaments were skewered through the septum of the nose.

Harpoons. Harpoons include all types of hunting implements, regardless of the manner in which they are projected, which have detachable heads to which is attached a line by which the animal is held after it has been struck. On a basis of the mode in which the head, that is, the part which enters the animal's body, is fitted to the shaft, harpoons may be divided into two broad groups. In one form, the head has a tang which fits into a socket or slit in the end of the shaft. Heads from Port Möller belonging to this type are illustrated in Fig. 17 a, c, d, and f. They are referred to as barbed harpoons, because one or more backward pointing barbs hold the head fixed in the flesh of the animal. In the other type, the head itself has a socket which fits over a rod at the end of the shaft (Fig. 17b, 17e). Generally this rod, in turn, is detachably set into a socket in the end of the shaft proper. This type includes the common Eskimo harpoon, usually called the toggle harpoon by reason of the fact that the whole head becomes lodged crosswise beneath the skin of the animal and acts as a toggle, the line being attached near its middle. Some harpoons having sockets, however, are fashioned with barbs.

Among the Port Möller specimens, barbed harpoon heads without sockets (Fig. 17a, c, d, and f) are much more numerous than toggle harpoon heads (Fig. 17b, 17e), in the proportion of about twenty-five to four.

[1]Nelson, 45–48.

In the case of a barbed harpoon the line is either simply tied around the head or through a hole in it. Among the Port Möller barbed harpoons there are approximately equal numbers of these two styles. Moreover, there is no obvious difference in age between them, though the oldest example of a barbed harpoon head without a hole is probably older (Trench U, 10 feet) than the oldest specimens to which the line was attached through a hole (Trench Q and Q+, 7½ feet). The type

Fig. 17 *a–f* (60.1–5807, 5805, 5809, 5810, 5806, 5808). Types of Harpoon Heads.

without a hole was also among the more recent refuse layers (Trench Q, 4½ feet).

Turning to the toggle harpoon heads from Port Möller, we find two specimens of the variety illustrated in Fig. 17*b* (60.1–5805), the second of which differs only in that it is decorated with two thin parallel lines instead of three diverging lines. In these the hole for the line passes medially through the head in the plane of bilateral symmetry, a very unusual arrangement. A third head, unfinished, has no hole. The fourth (Fig. 17*e*), a larger harpoon head, shows a normal position for the hole.

The three smaller harpoon heads just referred to may be considered of the same type. Their characteristic feature is the very narrow, deep, open socket, not closed even by lashings. All three are of the inserted blade type, the grooves having been started in the unfinished specimen. All are remarkably uniform in thickness and width. They do not con-

Fig. 18 *a–d* (60.1–5815, 5814, 5823, 5811a). Bone Points and Drill Points.

form exactly to any of the well-known types of harpoon heads.

The fourth harpoon head from Port Möller (Fig. 17*e* depth unknown) approaches Mathiassen's Thule Type 3[1] in that, first, the slot for the inserted blade was cut in the same plane as the line hole, second, the line hole was drilled through the thinner diameter of the head, and third, it has an open socket. However, it must be considered a variant

[1]Mathiassen, vol. 2, 18.

of Mathiassen's Thule Type 3 in that the socket opens on the thinner edge of the head instead of on the broad side. Indeed, in this respect the specimen is extremely unusual. Nevertheless, its open socket and the fact that the line hole passes through the thinner diameter of the head, place it in the category of thin open-socket harpoon heads, the first and oldest main group of toggle harpoon heads, once widely distributed, but in almost all parts of the Eskimo region long since replaced by more recent forms.

Multiple-pronged Spears. Bone points of the type illustrated in Fig. 18*d* have been grouped together on the basis of the shape of the end which is attached to the shaft. Among the Port Möller specimens they are much more frequent than among Jochelson's material from the Aleutian Islands, among which, indeed, the form with the projecting heel seems to be lacking. The examples from the Port Möller excavations are chiefly from the upper half of the trenches and probably the oldest specimen comes from a depth of 8 feet in Trench Q.

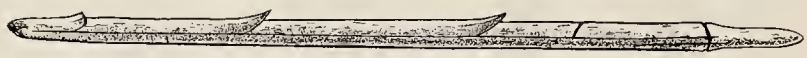


Fig. 19 (60.1–5812). Barbed Bone Dart or Arrow Point.

The Conical Tang. The bone dart or arrow point shown in Fig. 19 is representative of nine specimens found at Port Möller. Some are rather delicately carved. Five of them are barbed: the remaining four are smooth. All are similar in having a conical tang which had been inserted into the end of the shaft. This small conical tang distinguishes these points from all other objects found on the Port Möller site. The depths at which they were found suggest strongly that the type was unknown during the earlier occupation of the site. Of the eight examples of known depth, seven were found within approximately the upper third of the excavations, while the eighth, probably the oldest, was but three feet deep in Excavation S. This may well indicate that the type was a relatively late intrusion on to the Alaska Peninsula, especially in view of the fact that examples of it are almost absent from Jochelson's specimens. The six specimens which seem in his illustrations to have this conical tang all come from the easternmost quarter of the Aleutian Islands. Three are from Umnak Island.[1] The remaining three examples illustrated by Jochelson come from the vicinity of Unalaska.[2]

[1]Jochelson, Pl. 24, Fig. 37, less than 7 feet deep; and Fig. 39, depth unknown; and Pl. 25, Fig. 18, no mention of depth.

[2]Jochelson, Pl. 24, Fig. 34, depth not mentioned; Pl. 25, Fig. 25, depth less than 1.4 meters; and Fig. 57, depth not mentioned.

None of the tangs of this type found by Jochelson or at Port Möller show the two small knobs which are characteristic of the similar examples belonging to the Thule culture found by Mathiassen.[1] These two small knobs in the latter specimens serve as barbs to hold the head more securely in its socket. Mathiassen believes that this typical Thule arrowhead tang is an old form which has once been generally in use from Alaska to Greenland and that it persisted in the western regions after it had been superseded in the eastern parts.

Foreshafts. Twenty-two barbed lance foreshafts are included in the collection, corresponding in general type to those illustrated in Jochelson's publication.[2] They show a wide variety in the size and distribution of barbs. There are only two complete specimens: one a foot long, fashioned with a slot for a stone point (Excavation S, 2 feet), and the second 7 inches long without a slot (Trench U, 11 feet).

Four objects may be classed as bone foreshafts for simple harpoons, corresponding to Jochelson's specimens numbered 20, 21, and 23, in Pl. 23.

Eight fragments of foreshafts averaging about ½ inch in diameter show neither barbs nor slot.

Eight rods of bone and ivory, smooth and having pointed ends, may be foreshafts for toggle harpoons. None have holes. The longest is 8¾ inches in length (Trench U, 11 feet), and the shortest is 2½ inches in length. All are about ½ inch in diameter.

Hunting Implements. With regard to the hunting implements, an attempt was made to ascertain chronological variations in type and design. However, the variety of types is so great in proportion to the number of specimens that it is impossible to point out any distinct evolution in form during the history of the site. As to the method of attaching stone points to weapons, for instance, no stratigraphic variations are observed. Both the slot and the open countersunk socket for the stone point seem to be as old as the village site. Likewise no chronological distinction could be made between implements having barbs on one side and those having barbs on both sides. Of the twenty-five or more harpoon heads of the barbed variety, nothing can be said as to the evolution of form. Apparently the fundamental type is found both among the older and the more recent refuse material.

Drills. Among all the specimens, the two oldest having drilled holes were found 7½ feet deep in Trench Q and 4 feet deep in Excavation

[1] Mathiassen, vol. 2, Fig. 17 aad 9.
[2] Pl. 23, Figs. 1 and 7.

S. Of the drill points (Figs. 18*b* and 20*c*), the oldest of known depth were found five and six feet deep in Trench Q. However, that no evidence of the use of a rotating drill was found among the oldest objects, may well be fortuitous. The oldest specimens having gouged holes, which might have been made with the most rudimentary tools, are probably of about the same age as drilled pieces, judging from their positions (7½ feet, Trench Q+ and 5 feet, Excavation S).

The bowdrill has apparently long been used by the Eskimo. According to Mathiassen it was a feature of the Thule culture and probably also of the Cape Dorset culture[1] though Jenness questions this latter point.[2]

Ownership Marks. There were no definite indications of ownership marks on any of the weapon points from Port Möller, with the questionable exception of one barbed harpoon (Excavation S, 1 foot, Fig. 17*a*). The property mark has been used by sea hunters from the northwest coast of America, around Alaska and even as far as King William's Land in the central Arctic. It is found almost exclusively on hunting points which remain fixed in the animal after it has been hit, the purpose being to designate ownership of the animal, rather than of the weapon as such.

Awls. The typical bone awl, of which eleven examples were found, is illustrated in Fig. 18*b*. All were in the lower half of the excavations. Among these, the sharpened end always bevels across the hollow core of the bone.

On the other hand, all of five needle-like objects of much finer workmanship, pointed on one end, but having no holes, seem to belong to an earlier period than the above mentioned awls. A definite statement on this point cannot be made, however, since four of these needles from Excavation S might be older than their depths would indicate.

Fig. 18*a* illustrates a type of implement of which three specimens were found, at 6 feet and 7 feet in Trench Q and 4 feet in Excavation S.

Composite Fishhook. This typical Aleutian implement, which Jochelson found in excavations on all of the islands, is absent from the specimens obtained at Port Möller. This is strange, since it seems composite fishhooks have long been used in the Aleutian Islands. One of Jochelson's specimens was found at a depth of 5½ meters. He believes that the composite fishhook was in use long after the coming of the Russians, even though the present Aleut did not recognize the ones

[1]Mathiassen, vol. 2, p. 82.
[2]Jenness, 1925, 435.

Fig. 20 *a–o* (60.1–5832, 5830, 5829, 5831, 5832z.3, 5832h, 5832v, 5832s, 5832n, 5832z.2, 58321, 5832m, 5832b, 5832f, 5832d. Stone Blades and Points.

he excavated. It seems more likely that none were found at the Port Möller site because of insufficient excavation, rather than because of a lack of their use because of local environmental conditions, or other reasons.

Fig. 21 (60.1–5824). A Fish Lure.

Fig. 22 *a–e* (60.1–5839, 5835, 5838, 5837, 5836). Types of Weights and Sinkers.

Fish Lure. An object which probably was used as a fish lure or decoy is illustrated in Fig. 21. It was found at a depth of 6 feet in Trench Q. Fish lures have been widely used from Alaska to Greenland.

Sinkers. About thirty flat sinkers of the type shown in Fig. 22*c* were found. Almost all of them were found at or near the surface, the majority being found at *R* upon the surface or less than a foot deep. The oldest specimen is probably one from a depth of 4½ feet in Excavation E, the next oldest examples being from 5 feet in Trench Q and 2 feet and 3 feet in Excavation S.

Of the heavier type of weights illustrated in Fig. 22*d*, *e*, about thirteen specimens were secured. These seem to be older than the flat type. The specimen shown in Fig. 22*d*, for instance, was found on the

Fig. 23 *a–c* (60.1–5821, 5820, 5819). Carved Human Figures.

clay substratum in Excavation S, and three were found at depths of 4 feet, 5½ feet, and 7½ feet in Excavation Q.

Eight or ten sack-shaped sinkers of the form illustrated in Fig. 22*a* were found, the majority being relatively fairly old.

Four stone weights with holes bored through them were found at or near the surface (Fig. 22*b*).

Stone Bowls. Several fragments of crude stone dishes or bowls were found.

Human Figures. The specimens illustrated in Fig. 23*a*, *b* are typical of about five objects carved from bone or ivory to represent human figures. One of the examples illustrated (Fig. 23*b*) is probably

the most recent (Trench Q, 3 feet). One of the oldest (Trench Q, 8½ feet) is identical with it except for the absence of the dots representing the features. The human figure shown in Fig. 23*c*, from an unknown depth in Trench T, is unique in the collection.

Large Bowl-shaped Objects of Clay. During the excavations three examples of these strange phenomena were encountered. A typical example was about two feet in diameter and ten inches in depth. The soft, light-yellow clay, about ¾ inch in thickness, forming the outline stood out in sharp contrast to the dark earth about it. Traces of fire were found nearby, but not within the bowl. It was a foot or two below the surface in Trench U. The two others were found in Excavation S. One of these was in the shape of a half bowl, and it lay 3 feet below the surface and 3 feet northeast of the head of skeleton 99–9480. Their purpose is not known.

Stone Blades and Points. Fig. 20 illustrates the representative types from the Port Möller collection selected from about five hundred specimens. The material is shale (Doctor Whitlock) with very few exceptions. A few specimens are of various sorts of obsidian. The types seem to be fairly uniform at all depths.[1]

No stone blades of the typical Eskimo ulu were found, though some fragments may have belonged to this type. Specimens showing grinding instead of chipping are exceedingly rare. One piece of such workmanship is the blade illustrated in Fig. 20*d* ground to a very sharp, curved blade (Excavation S, ½ foot).

Skin Scrapers. Two specimens were found. One of them (Trench Q, 5½ feet) is 4½ inches long; the other, from the beach, is 3½ inches long and has a hole drilled in the narrow end.

Spoon. A shovel-shaped bone spoon, 3¼ inches long, with the handle broken, was found on the beach.

Needle. At about 7 feet in Trench U was a fragment of a bone needle 3½ inches long and 1/16 inch in diameter. It has a circular eye so small as scarcely to admit a piece of carpet thread.

Disk-shaped Pendants. Throughout the excavating many of these articles were found. They are made by perforating a bone from the vertebral column of a large sea mammal. The hole is in the center and the specimens range up to 4½ inches in diameter.

Hafted Handles. A few specimens were found, not lending themselves to description.

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[1]For comparative material, see Jochelson, 58–73; Mathiassen, Vol. 1, Pl. 61, etc.; and Jenness, 1925, 429.

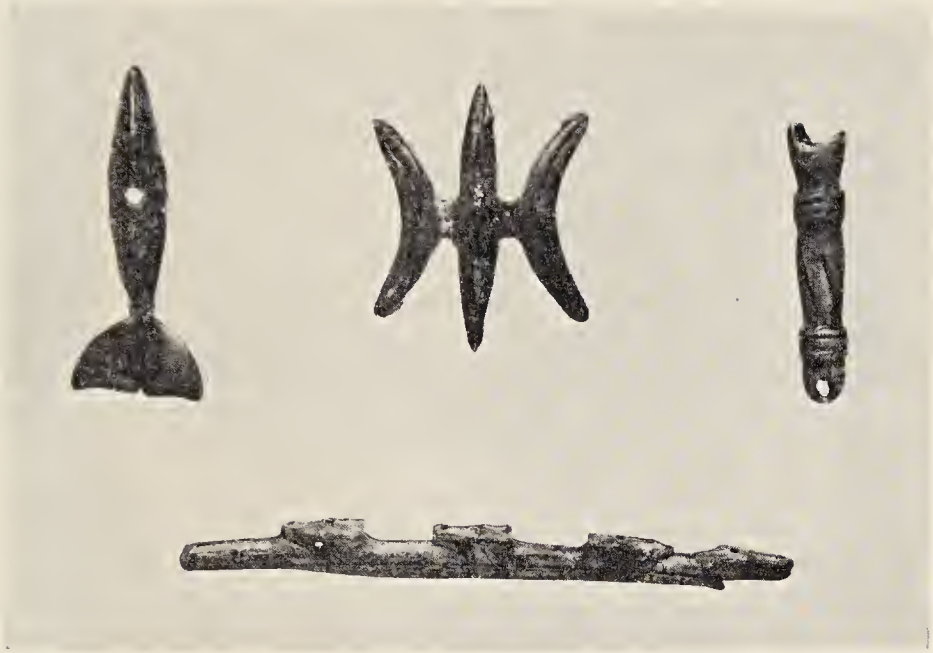

Fig. 24 *a–d* (60.1–5822, 5825, 5826, 5827). Pendants and Ornaments.

Fig. 25 *a–c* (60.1–5828*a–c*). Toggles.

Cylindrical Beads. Three cylindrical beads of bone were found, the longest of which was almost 3 inches in length.

Pendants and Ornaments. Four specimens are illustrated in Fig. 24 (Fig. 24*a*, Trench Q, 4 feet; Fig. 24*b*, Excavation S, 2 feet; Fig. 24*c*, position unknown; Fig. 24*d*, Trench Q+, depth unknown).

Toggles. Among the collection are three specimens, illustrated in Fig. 25*a–c*. Of these only one is of known depth (Fig. 25*b*), a miniature example, three-quarters inch long, found at the bottom of Trench U.

Coal. Throughout the excavating evidences of fire were found at almost all depths down to the very bottom. It is noteworthy that among the charred material fragments of lignite were sometimes present. Samples of this material taken from the following positions were identified by Doctor Herbert Whitlock: Trench Q, 5 feet and 10 feet 6 inches; Excavation S, 2 feet, 4 feet, and 4½ feet. We cannot be certain that coal was used as fuel by the ancient inhabitants here, but we could not expect more evidence pointing towards the fact than we found. The source of the fragments found among the black ashes probably was in Möller Bay a few miles seaward from the village site where fair sized seams of coal are exposed along the beach cliffs. Driftwood is rather scarce and the gnarled alders about a mile from the village site are a difficult source of fuel.

The Age of the Village Site

Trench U, described under the heading Refuse Strata in the Chief Trenches perhaps gives the best idea of the antiquity of the site. Especially significant is the horizontal arrangement of the layers, described in the second paragraph under that section, which seems to indicate a recession of the cliff. The time involved in the accumulation of the five feet of surface material cannot be estimated. High winds favor the transportation of dust and sand, but the location of Trench U at the edge of the cliff would perhaps favor deflation rather than deposition. These conditions, together with the fact that no wood was preserved in the refuse layers, with the exception of a petrified piece at 7 feet in Trench M, and that no evidence of white influence was found among any of the refuse, point toward considerable antiquity.

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